WHAT IS CLAIMED IS:

1. An optical assay device for the detection of an analyte of interest in a sample comprising:

a support containing channels,

an optically functional layer positioned on said support such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device,

an attachment layer positioned on said optically functional layer, and

an analyte specific receptive layer positioned on said attachment layer.

2. An optical assay device for the detection of an analyte of interest in a sample comprising:

a support containing channels,

an optically functional layer positioned on said support such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device, and

an attachment layer positioned on said optically functional layer.

3. An optical assay device for the detection of an analyte of interest in a sample comprising:

a porous support,

an optically functional layer comprising discrete, optically functional particles embedded in said support, such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device,

an attachment layer positioned on said particles, and

an analyte specific receptive layer positioned on said attachment layer.

4. An optical assay device for the detection of an analyte of interest in a sample comprising:

a porous support,

an optically functional layer comprising discrete, optically functional particles embedded in said support such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device, and

an attachment layer positioned on said particles.

5. An optical assay device for the detection of an analyte of interest in a sample comprising:

a porous support,

an optically functional layer containing channels positioned on said support such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device,

an attachment layer positioned on said optically functional layer, and

an analyte specific receptive layer positioned on said attachment layer.

6. An optical assay device for the detection of an analyte of interest in a sample comprising:

a porous support,

an optically functional layer containing channels positioned on said support, such that said optically functional layer and said support allow for laminar flow of said sample through layers of said device, and

an attachment layer positioned on said optically functional layer.

7. The device of any of claims 1, 2, 3, 4, 5 or 6 wherein said optically functional layer further comprises an antireflective layer.

8. The device of any of claim 1, 2, 3, 4, 5 or 6, wherein said attachment layer is nickel.

9. The device of any of claims 1, 2, 3, 4, 5 or 6, wherein said device further comprises an absorbent material surrounding said optically functional layer or beneath said support.

10. The device of any of claims 1, 2, 3, 4, 5 or 6, wherein

said support comprises polyester or polycarbonate,

said optically functional layer comprises a layer of silicon nitride positioned on a layer of amorphous silicon, and

said attachment layer comprises nickel.

11. The device of any of claims 1, 2, 3, 4, 5 or 6 wherein said support comprises polycarbonate or polyester, and

said optically functional layer comprises a layer of germanium on which is positioned a layer of diamond-like carbon.

12. The device of any of claims 1, 2, 3, 4, 5 or 6 wherein said optically functional layer comprises a layer of germanium on which is positioned a layer of diamond-like carbon, and

said attachment layer comprises nickel.

13. A method for detecting the presence or amount of an analyte in a sample comprising the steps of:

providing a device comprising,

a support,

an optically functional layer positioned on said support,

an attachment layer positioned on said optically functional layer,

an analyte specific receptive layer positioned on said attachment layer,

applying a sample to surface of said device such that said sample is drawn by laminar flow through or across layers of said device, and

said analyte binds to said analyte receptive layer causing a mass change on said surface of said device thus indicating the presence or amount of said analyte in said sample.

14. A method for detecting the presence or amount of an analyte in a sample comprising the steps of:

providing a device comprising,

a support,

an optically functional layer positioned on said support,

an attachment layer positioned on said optically functional layer, and

applying said sample to the surface of said device such that said sample is drawn by laminar flow through and/or across layers of said device,

said analyte binds to said attachment layer, and

providing an analyte specific binding reagent which binds said analyte bound to said attachment layer causing a mass change on the surface of said device thus indicating the presence or amount of said analyte in said sample.

15. The method of claim 13 or 14, wherein said support contains channels.

16. The method of claim 13 or 14, wherein said support is porous and said optically functional layer comprises particles.

17. The method of claim 13 or 14, wherein said support is porous and said optically functional layer contains channels.

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18. Method for constructing an optical assay device with laminar flow properties, comprising the steps of:

providing a support,

providing an optically functional layer on said support such that said optically functional layer and said support allow for laminar flow of a sample through or across layers of said device,

providing an attachment layer on said optically functional layer, and

providing an analyte specific receptive layer on said optically functional layer.

19. Method for constructing an optical assay device with laminar flow properties, comprising the steps of:

providing a support,

providing an optically functional layer on said support such that said optically functional layer and said support allow for laminar flow of a sample through and across layers of said device, and

providing an attachment layer on said optically functional layer.

20. The method of claims 18 or 19, wherein said support contains channels.

21. The method of claims 18 or 19, wherein said support is porous and said optically functional layer comprises particles.

22. The method of claims 18 or 19, wherein said support is porous and said optically functional layer contains channels.

23. A composition comprising a support and an optically functional layer which is useful for promoting laminar flow of sample through said layers.

24. The composition of claim 23, wherein said support contains channels.

25. The composition of claim 23, wherein said support is porous and said optically functional layer comprises optically functional particles.

26. The composition of claim 23, wherein said support is porous and said optically functional layer contains channels.

27. The composition of claim 23, wherein said support comprises polycarbonate and said optically functional layer comprises amorphous silicon.

28. The composition of claim 27, wherein said optically functional layer further comprises a layer of silicon nitride positioned on said amorphous silicon.

29. The composition of claim 23, wherein said support comprises polycarbonate and said optically functional layer comprises germanium.

30. The composition of claim 29, wherein said optically functional layer further comprises a layer of diamond-like carbon positioned on said germanium.

31. The composition of claim 23, wherein said support comprises polyester and said optically functional layer comprises amorphous silicon.

32. The composition of claim 31, wherein said optically functional layer further comprises a layer of silicon nitride positioned on said amorphous silicon.

33. The composition of claim 23, wherein said support comprises polyester and said optically functional layer comprises germanium.

34. The composition of claim 33, wherein said optically functional layer further comprises a layer of diamond-like carbon positioned on said layer of germanium.

35. A non-inert composition of diamond-like carbon useful as an attachment layer.

36. The device of any of claims 1, 2, 3, 4, 5, or 6, wherein said analyte is selected from the group consisting of antigens, antibodies, receptors, ligands, chelates, proteins, enzymes, nucleic acids, DNA, RNA, pesticides, herbicides, inorganic or organic compounds.

37. The device of any of claims 1, 2, 3, 4, 5 or 6 wherein said optically functional layer comprises a layer of silicon nitride positioned on a layer of amorphous silicon.

38. The device of any of claims 1, 2, 3, 4, 5 or 6 wherein said attachment layer comprises diamond-like carbon.

39. An assay device for the detection of an analyte of interest comprising:

a support, and

an attachment layer positioned on said support comprising diamond-like carbon.

40. An optical assay device for the detection of an analyte of interest comprising:

a support,

an optically functional layer positioned on said support, and

an attachment layer positioned on said optically functional layer comprising diamond-like carbon.

41. The device of claim 39 or 40, further comprising an analyte specific receptive layer positioned on said attachment layer.

42. The device of claim 39 or 40, wherein said attachment layer non-specifically binds analyte selected from the group consisting of antigens, antibodies, receptors, nucleic acids, polysacchrides, lipopolysacchrides, enzymes, proteins, microorganisms, fragments derived from microorganisms, haptens, drugs, food contaminants, environmental agents,ligands, chelators, and analogs or derivatives thereof.

43. The device of claim 41, wherein said receptive layer comprises biomolecules selected from the group consisting of antigens, antibodies, receptors, nucleic acids, polysacchrides, lipopolysacchrides, enzymes, proteins, microorganisms, fragments derived from microorganisms, haptens, drugs, food contaminants, environmental agents, ligands, chelators, and analogs or derivatives there.

44. The device of claim 39, wherein said diamond-like carbon is coated on said support to a thickness of 50 Å.

45. The device of claim 40, wherein said diamond-like carbon is coated on said optically functional layer to a thickness of 50 Å.

46. The device of claim 39, wherein said diamond-like carbon is coated on said support to a thickness of 50 to 3000 Å.

47. The device of claim 40, wherein said diamond-like carbon is coated on said optically functional layer to a thickness of 50 to 3000 Å.

48. The device of claim 39, wherein said diamond-like carbon is coated on said support by a process selected from the group consisting of ion beam technique, chemical vapor deposition, plasma deposition, ion beam gun, shock-synthesis technique, sputtering, thermal radio-frequency and microwave-supported plasmas, heated filament, direct current plasma, chemical vapor deposition, and plasma deposition.

49. The device of claim 40, wherein said diamond-like carbon is coated on said optically functional layer by a process selected from the group consisting of ion beam technique, chemical vapor deposition, plasma deposition, ion beam gun, shock-synthesis technique, sputtering, thermal radio-frequency and microwave-supported plasmas, heated filament, direct current plasma, chemical vapor deposition, and plasma deposition.

50. The device of claim 39 or 40, wherein said diamond-like carbon comprises industrial diamonds.